

REMARKS

This Response is submitted in reply to the final Office Action mailed on June 14, 2006. No fee is due in connection with this Response. The Commissioner is authorized to charge any additional fees which may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 112701-536 on the account statement.

Claims 5-11 and 19-20 are pending in this application. Claims 1-4 and 12-18 were previously withdrawn. In the Office Action, Claims 5-11 and 19-20 are rejected under 35 U.S.C. §112, first paragraph. For the reasons set forth below, Applicants respectfully submit that the rejections should be withdrawn.

In the Office Action, Claims 5-11 and 19-20 are rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the enablement requirement. The Patent Office alleges that it is not clear that the claimed invention would result in enhanced cocoa flavor and that no other use is asserted. Therefore, the Patent Office asserts that the skilled artisan would not know how to use the claimed invention.

Any analysis of whether a particular claim is supported by the disclosure in an application requires a determination of whether that disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention. The standard for determining whether the specification meets the enablement requirement is whether the experimentation needed to practice the invention is undue or unreasonable. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). A patent need not teach, and preferably omits, what is well known in the art. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991).

First, Applicants respectfully submit that Claims 5-11 are fully enabled as required by 35 U.S.C. §112, first paragraph. For example, Claim 5 is directed to a novel isolated or synthesized polynucleotide comprising a nucleotide sequence encoding the polypeptide identified by SEQ ID NO: 1, or a fragment thereof comprising SEQ ID NO:3. Claims 6-11 that depend from Claim 5 are related to this polynucleotide in various cells, vectors and plants and do not specifically recite enhancing cocoa flavor. The Patent Office admits that one skilled in the art could make the claimed invention. See, Office Action, page 5, lines 7-8. Moreover, the skilled artisan can

practice Claims 6-10 by using the claimed polynucleotide in various cells, vectors and plants according to techniques known by the skilled artisan.

When a compound or composition claim is not limited by a recited use, any enabled use that would reasonably correlate with the entire scope of that claim is sufficient to preclude a rejection for nonenablement based on how to use. See, MPEP 21643.01(c). If multiple uses for claimed compounds or compositions are disclosed in the application, then an enablement rejection must include an explanation, sufficiently supported by the evidence, why the specification fails to enable each disclosed use. In other words, if any use is enabled when multiple uses are disclosed, the application is enabling for the claimed invention. *Id.* As a result, Claim 5 directed to a novel polynucleotide and Claims 6-11 that use the claimed polynucleotide in various cells, vectors and plants and do not recite enhancing cocoa flavor satisfy the enablement requirement under 35 U.S.C. §112, first paragraph.

Second, Applicants respectfully disagree with the Patent Office's conclusion regarding the prophetic transgenic plants and prophetic results taught by the specification and the absence of taste-tests showing enhanced cocoa flavor. See, Office Action, page 3, lines 5-11 and page 5, lines 4-6. Compliance with the enablement requirement of 35 U.S.C. §112, first paragraph, does not turn on whether an example is disclosed. An example may be "working" or "prophetic." A working example is based on work actually performed. A prophetic example describes an embodiment of the invention based on predicted results rather than work actually conducted or results actually achieved. An applicant need not have actually reduced the invention to practice prior to filing. See, MPEP 2164.02.

Applicants respectfully submit that, based on the specification and the level of skill in the art, the skilled artisan would be able to use Claims 19-20 that are directed, in part, to a method of producing cocoa beans with increased cocoa flavor peptides. The method comprises transforming a cocoa cell with one or more of the nucleotide sequences of Claim 5 and generating at least one cocoa plant from the transformed cell. As taught by the specification, increasing the concentration of polypeptides in cocoa beans by transforming cocoa cells and generating cocoa plants from these transformed cells results in cocoa beans with enhanced cocoa flavor. See, specification, page 5, lines 8-14. For example, plants containing higher concentration of the polypeptides will have a stronger cocoa flavor after processing. *Id.*

Moreover, Applicants submit an Affidavit under 37 C.F.R. §1.132 (“*Affidavit*” attached hereto as Exhibit A) to provide evidence that the skilled artisan would be able to practice the claimed invention without undue experimentation. As supported by the *Affidavit*, the present invention is directed, in part, to cocoa plants having transformed cells using isolated or synthesized polynucleotides comprising a nucleotide sequence encoding the polypeptide identified by SEQ ID NO: 1, or a fragment thereof comprising SEQ ID NO:3.

Furthermore, the invention provides for the use of the polypeptides for the manufacture of cocoa flavor. As supported by the *Affidavit*, the claimed polypeptides may be added to a fermentation mixture of cocoa beans, in order to provide a higher amount of the polypeptides for degradation. In addition, when using cocoa plants that have been modified by recombinant means and contain a high number of copies of nucleotide sequences encoding the polypeptides of the present invention, the plants will inherently contain a higher concentration of the polypeptides and eventually will result in the production of a stronger cocoa flavor after the processing.

As supported by the *Affidavit*, methods of manufacturing cocoa flavor are well known. Applicants respectfully submit that there is adequate disclosure of transgenic cocoa beans that express the polypeptides or fragments thereof in the specification and that Claims 19-20 directed, in part, to producing cocoa beans with increased cocoa flavor peptides can be carried out by techniques well known in the art. Indeed, there are clear disclosures evidencing an improved cocoa flavor from the transformed cocoa plants after processing (e.g. a cocoa powder will be obtained after processing) in accordance with the present invention as understood by those having ordinary skill in the art.

Moreover, to determine the enhanced cocoa flavor, cocoa from these transformed plants can be readily made by using conventional cocoa making techniques. As a result, the skilled artisan can make and use the claimed invention without undue experimentation. Accordingly, Applicants do not believe that additional examples of taste-tests are necessary.

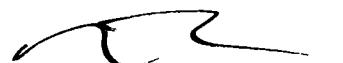
Based on at least these noted reasons, Applicants believe that Claims 5-11 and 19-20 fully comply with 35 U.S.C. §112, first paragraph. Accordingly, Applicants respectfully request that the rejection of Claims 5-11 and 19-20 under 35 U.S.C. §112 be withdrawn.

For the foregoing reasons, Applicants respectfully request reconsideration of the above-identified patent application and earnestly solicit an early allowance of same.

Respectfully submitted,

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Dated: September 13, 2006